



Department of Computer Science & Engineering

Course Title : Computer Networks Lab

Course Code : CSE 320

Experiment Number : 02

**Experiment Name : Report on understand the Configuration
and Implementation of Routers and
Static Routing**

Date of Experiment : 19 September, 2024

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Objective:

To understand the Configuration and Implementation of Routers and Static Routing.

Task-1

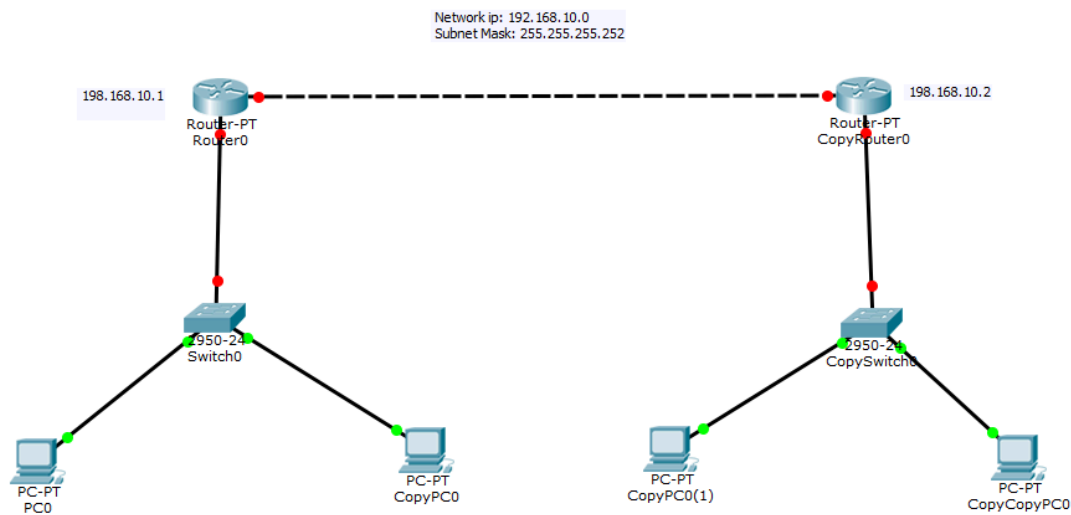


Fig:Network IP address and Subnet Mask address

Network IP: A Network IP address is the portion of an IP address that identifies the specific network a device belongs to.

Example : 192.168.10.0

Subnet Mask : A subnet mask defines the range of IP addresses available within a network.

Example: 255.255.255.252

Available host = 4

Network IP : 198.168.10. 0

Broadcast IP: 198.168.10.3

Useable Ip Addresses : 198.168.10.1 and 198.168.10.2

Task-2

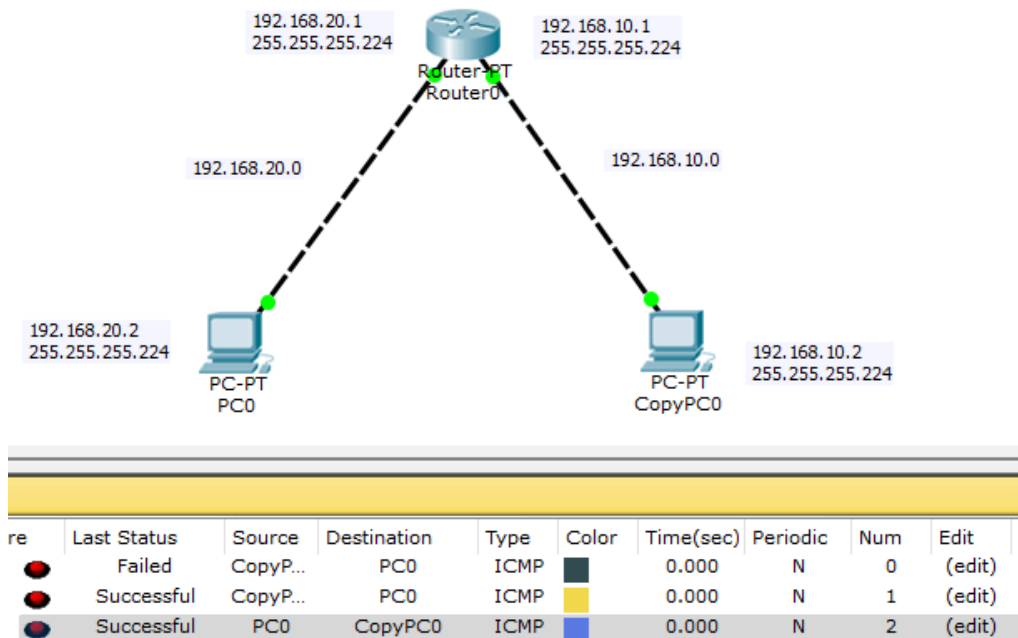


Fig: Subnetting

Subnetting: Subnetting is the process of dividing a large network (IP address space) into smaller, more manageable sub-networks, called subnets. It helps improve network efficiency, security, and organization by allowing better control over traffic and IP address allocation

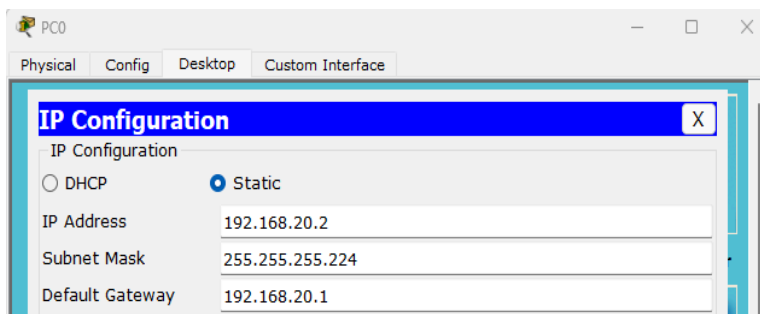


Fig: PC - 0 Configuration

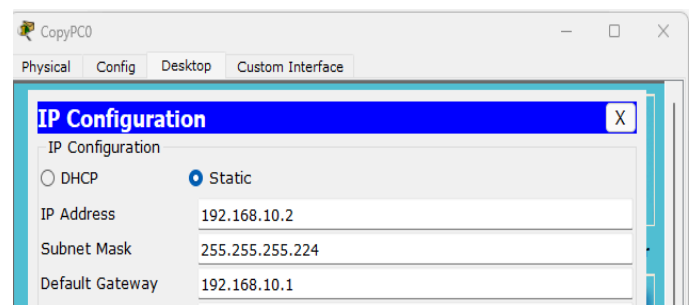
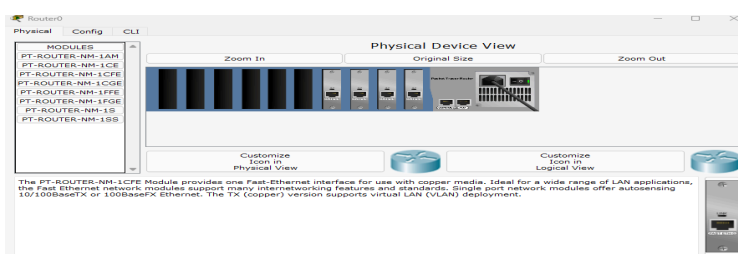


Fig: PC - 1 Configuration



CLI(Command Line Interface): Router Configuration

1. Router enable : en
2. Configuration Start: conf t
3. For fa0/0 port:
 - i. int fa0/0
 - ii. ip address 192.168.20.1 255.255.255.224
 - iii. no shut
 - iv. exit
4. For fa1/0 port:
 - i. int fa1/0
 - ii. ip address 192.168.10.1 255.255.255.224
 - iii. no shut
 - iv. exit

Task-3

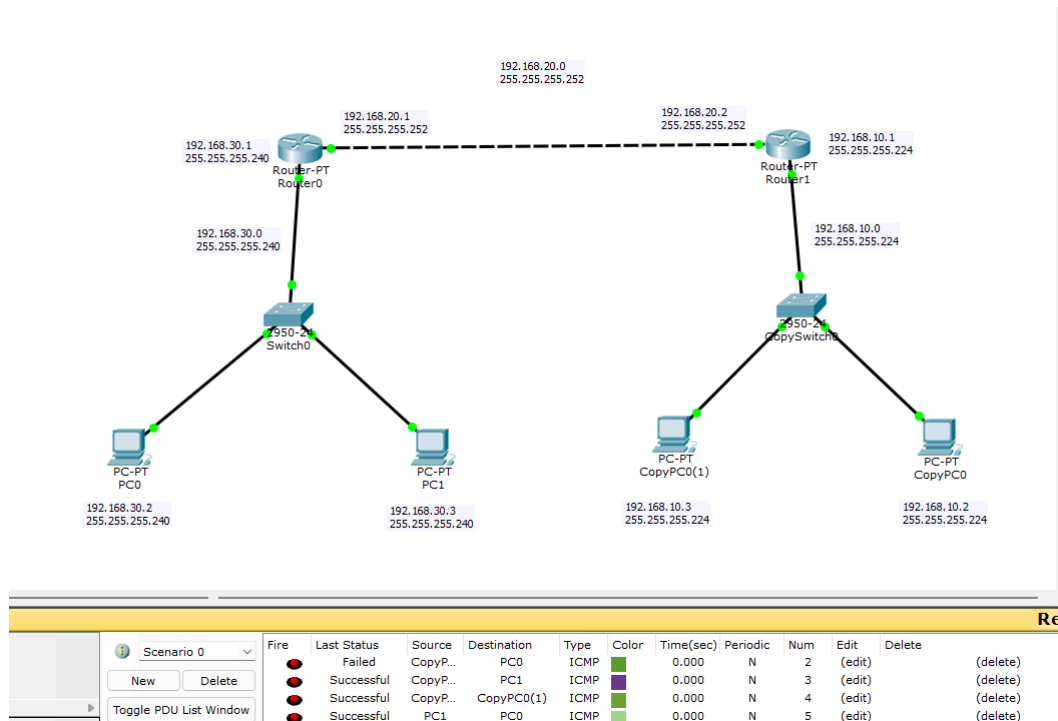


Fig: Static Routing

Static Routing: Static routing is a routing method in which a network administrator manually configures routes in a router's routing table.

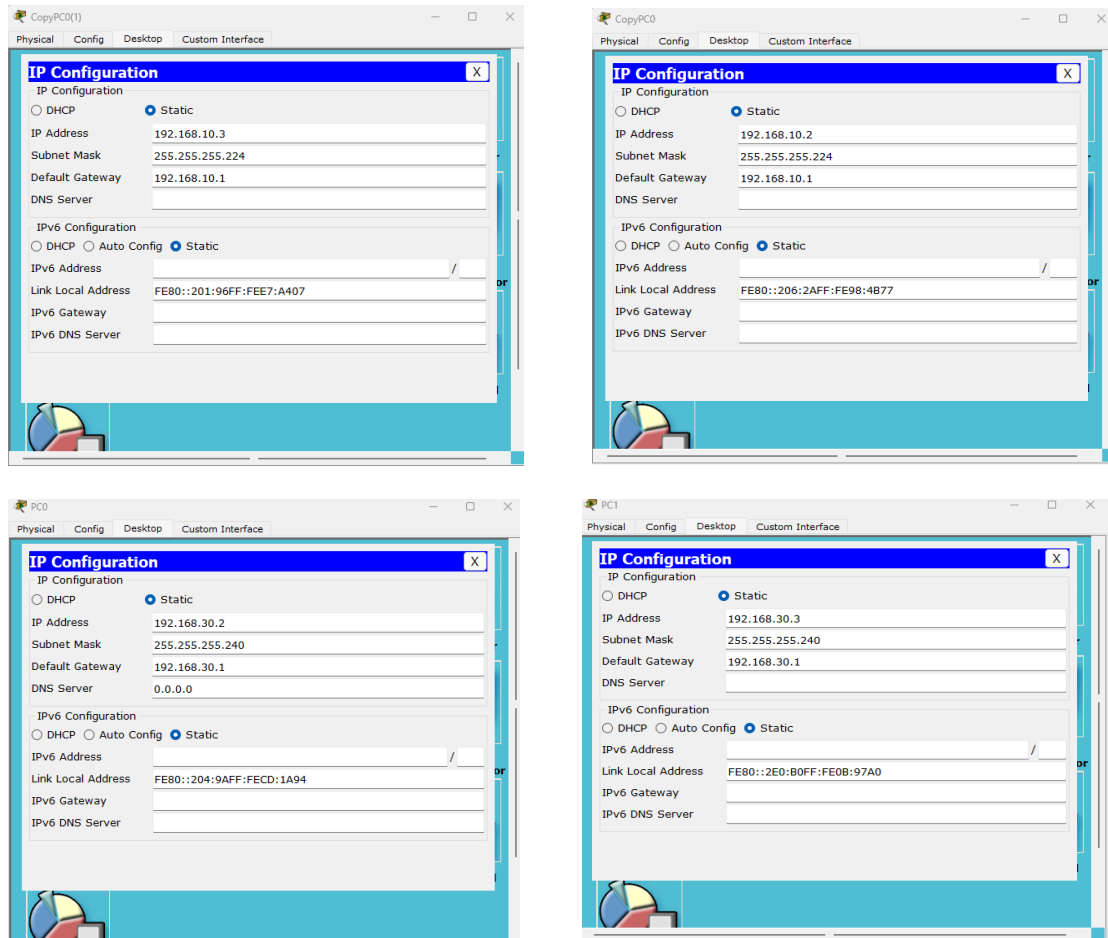


Fig: PCs IP Configurations

CLI(Command Line Interface):

Router Configuration - 0.

1. Router enable : en
2. Configuration Start: conf t
3. For fa0/0 port:

- i. int fa0/0
- ii. ip address 192.168.30.1 255.255.255.240
- iii. no shut
- iv. exit
- 4. For fa1/0 port:
 - i. int fa1/0
 - ii. ip address 192.168.20.1 255.255.255.252
 - iii. no shut
 - iv. exit
- 5. ip route 192.168.10.0 255.255.255.224 192.168.20.2
- 6. exit

Router Configuration - 1

- 1. Router enable : en
- 2. Configuration Start: conf t
- 3. For fa0/0 port:
 - i. int fa0/0
 - ii. ip address 192.168.20.2 255.255.255.252
 - iii. no shut
 - iv. exit
- 4. For fa1/0 port:
 - i. int fa1/0
 - ii. ip address 192.168.10.1 255.255.255.224
 - iii. no shut
 - iv. exit
- 5. ip route 192.168.30.0 255.255.255.240 192.168.20.1
- 6. exit